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REVIEWS.

FERNS.*—This valuable addition to the library of the student of Ferns, long waited for, and delayed in its first stages of publication by the death of its venerable and learned author,† has been brought out in parts, and at length completed, in accordance with the desire of Sir William Hooker, by Mr. Baker, who has assumed its authorship so far as to add, to the already prepared manuscript, descriptions of new species of Ferns received after that had been written, and to put the whole in condition for publication.

The title of the book, "Synopsis Filicum," conveys the idea of a brief and condensed description and notice of the "known Ferns," and such it is, while it also plays the part of a supplement to the "Species Filicum"‡ of the same author, upon which he was engaged for many years. As the preface tells us, "the Author, having recently completed his 'Species Filicum,' now offers to the public a 'Synopsis of all known Ferns,' which contains, besides brief diagnoses of the species described more in detail in that work, together with their geographical distribution as far as yet ascertained, such additions and corrections as have come to his knowledge * * * *".

One thing to which special reference is made in the preface is, that all descriptions of ferns, which have been so badly or carelessly drawn up that it is impossible to identify which of a number of species a description refers to, and which Pteridologists have, with much labor, and much detriment to true progress in their science, dragged along after them, have been omitted and ignored. This at once reduces very much the number of specific names, and as they are nothing but names, it is a great relief.

The forms considered worthy to rank as species have been somewhat reduced in number by the authors, since they have regarded as varieties numerous plants described by others as species. In much of this we certainly concur, but in some cases should wish to record a difference of opinion. It must be acknowledged, however, that the authors have had the advantage of the largest Fern Herbarium in existence, the formation of which began as far back as 1811, and any one who has handled numerous specimens of ferns cannot but have observed how some forms pass through intermediate stages, into what appear at first to be quite different plants.

* Synopsis Filicum; or a Synopsis of all known Ferns, including the Osmundaceæ, Schizæaceæ, Marattiaceæ, and Ophioglossaceæ (chiefly derived from the Kew Herbarium): Accompanied by figures representing the essential character of each Genus. By the late Sir William Jackson Hooker, K. H., D. C. L., F. R. S., A. S., and L. S., Director of the Royal Gardens of Kew, and John Gilbert Baker, F. L. S., Assistant Curator of the Kew Herbarium. London: Robert Hardwicke, 192 Piccadilly. 1868. 8vo, pp. 482, tt. 11.

† This is the separate work of Sir W. J. Hooker.

‡ In 5 vols, 8vo, with three hundred plates representing upwards of five hundred species.

A convenience in the arrangement of the book is the list of the (75) genera, placed under their respective suborders and tribes, which is given at the beginning. The generic characters are given in as few words as is consistent with intelligibility, and the species are described in much the same manner, all the words of frequent use being abbreviated. The greater part of the extensive synonymy, which is often of a complicated character, is left out.* The species of *Hymenophyllum* and *Trichomanes*, which have been so much multiplied by certain authors, are here reduced in the ratio of something like two hundred to five hundred. The group of ferns called *Phegopteris* is here considered as a part of the genus *Polypodium*. We should much prefer to see the view of the lamented Mettenius adopted, that they are exindusioid *Aspidiæ*, with which they agree in aspect and other characteristics, and where so many of them have been absorbed by the discovery of an indusium.

The inclusion of the suborders specially mentioned in the title is a great boon, for here we have them, for the first time, comprehensively described. — H. MANN.

THE PAST AND FUTURE OF OUR PLANET.†—The author says, in his preface, that he has freely used the writings of Lyell, Owen, Hall, Dana, etc., "as they had done the writings of others." Now these are the names of men who have grouped the written opinions of others around a nucleus of their own original investigations, whereas Mr. Denton has no such nucleus, the whole being a compilation. As such, however, it will be found of value to the general reader, since it brings together, in a popular manner, the researches which have been made in the geology and palæontology of the United States, and which can only be found elsewhere in Professor Dana's unsurpassed *Manual of Geology*.

The author adopts without question, the disputed view that the earth is a molten mass covered by a thin crust, in spite of Lyell and Hopkins.

The successive order of the appearance of animals is given as Radiates, Mollusks, Articulates, and Vertebrates, whereas it is well known that the three first appear simultaneously. The Protozoa are wholly ignored and although it is rather too soon to speculate about them, we think the author ought, at least, to have made more than a passing allusion to the important discovery of the *Eozoön*. Trilobites are said to have no feet, whereas every naturalist supposes that they must have had soft rudimentary appendages, and some have supposed that they made the tracks found in the Potsdam sandstone and elsewhere.

The explanation of the different ages of granite is very apt to mislead the reader into the belief, that the more modern granites have only been formed in the centre, and spouted up in veins through the later rocks, whereas it occurs in masses just as the older granites occur, and not differing except in age.

The illustrations are extremely poor, but the lectures are popular,

*The student is expected to refer to the *Species Filicum* for that.

†The Past and Future of our Planet. By William Denton. 8vo, pp. 344. Boston, 1868.